7852.2600 PREFERRED ROUTE LOCATION; ENVIRONMENT DESCRIPTION

Subpart 1. Preferred route location.

The applicant must identify the preferred route for the proposed pipeline and associated facilities, on any of the following documents which must be submitted with the application:

A. United States Geological Survey topographical maps to the scale of 1:24,000, if available;

B. Minnesota Department of Transportation county highway maps; or

C. aerial photos or other appropriate maps of equal or greater detail in items A and B. The maps or photos may be reduced for inclusion in the application. One full-sized set shall be provided to the commission.

U.S. Geological Survey ("USGS") topographical maps and aerial photo maps for the preferred pipeline route from the North Dakota state line in Polk County, Minnesota to the Wisconsin state line in Carlton County, Minnesota are included in Appendix G.5 of the EIR.

Subpart 2. Other route locations.

All other route alternatives considered by the applicant must be identified on a separate map or aerial photos or set of maps and photos or identified in correspondence or other documents evidencing consideration of the route by the applicant.

NDPC studied a variety of routes for the preferred pipeline. The study consisted of the no-action alternative, system alternatives, and route alternatives. To be considered viable, an alternative had to meet three factors: ability to meet project objectives; technical and economic feasibility; and have significant land use compatibility and environmental advantage over the preferred route.

Section 2.0 of the EIR provides a detailed analysis of the alternatives considered and Section 7852.3100 of this application provides a summary of this analysis.

Subpart 3. Description of environment.

The applicant must provide a description of the existing environment along the preferred route.

NDPC prepared an Environmental Information Report for the Project that provides a description of the existing environment and socioeconomic conditions along the preferred route, an analysis of potential human and environmental impacts, and a discussion of measures that will be taken to minimize or mitigate adverse impacts and protect and restore the right-of-way. A summary of the existing environmental conditions along the preferred route is provided below. A summary of potential environmental impacts and mitigation measures is provided in Section 7852.2700 of this application.

Socioeconomics

County population levels within the project area range from 4,087 persons in Red Lake County to 62,882 persons in Crow Wing County. In general, population levels are low in these counties. Population densities (an indicator of the extent of development) in the counties affected by the project averages 22.9 people per square mile. All county-level population densities along the preferred route are lower than the Minnesota average of 66.6 people per square mile, reflecting the generally rural character of much of the preferred route. The April 2013 unemployment rates in the project area varied from 5.3 percent in Polk County to 15.2 percent in Clearwater County (compared to a statewide average of 5.4 percent). Employment in the project area is concentrated in the following sectors: education, health, and social services, retail trade, manufacturing, arts, entertainment, recreation, accommodation and food services, and construction industries. Education, health and social services, retail trade and manufacturing are the top employment industries in the counties crossed by the preferred route. Per capita income in 2011 ranged from $22,408 in Red Lake County to $25,645 in Crow Wing County. In general, per capita income is lowest in rural counties with low population densities and high unemployment rates, and highest in urban counties with high population densities and low unemployment rates. Seven municipalities are located within approximately one mile of the preferred route and no municipal boundaries would be crossed by the preferred route (see Table 3.1-2 of the EIR).

Section 3.0 of the EIR provides additional details regarding socioeconomic conditions.

Land Use

Using the USGS Land Use and Land Cover Classification System, NDPC identified land use along the preferred route (including the construction right-of-way and known additional temporary workspaces) and classified it into the following five categories based on prevalent land use and vegetation cover

types: agricultural lands, developed lands, forest lands, open lands, and wetlands/open water. The predominant land use identified along the preferred route is agricultural land, which accounts for 1,610.3 acres (or 37.7 percent) of the total construction area. Of the agricultural land affected, approximately 1,004.4 acres is cultivated and the remaining 606.0 acres is pasture land. Forested land accounts for 1,524.5 acres (or 35.7 percent) of the total construction area. Other land uses are wetland/open water (614.2 acres or 14.4 percent), open land (510.2 acres or 12.0 percent), and developed land (6.8 acres or less than 1 percent) (see section 4.2 of the EIR).

The land use categories that will be affected resulting from the siting of the new Clearbrook terminal facilities include agricultural land (122.9 acres or 77.1 percent), wetland (14.6 acres or 9.2 percent), forested land (11.4 acres or 7.1 percent), and open land (10.5 acres or 6.6 percent). The land use categories that will be affected resulting from the siting of the Pine River facility will be agricultural land (10.6 acres or 79.6 percent), open land (1.4 acres or 10.6 percent), and forest land (1.3 acres or 9.8 percent of the site). Construction will only occur on a portion of the facility parcels presented in this land use analysis.

The preferred route predominantly crosses private land (230.8 miles or approximately 75.5 percent of the route). The preferred route also crosses state lands (28.1 miles or approximately 9.2 percent of the route) and county lands (47.0 miles or approximately 15.4 percent of the route) (see section 4.2.1 of the EIR).

Section 4.0 of the EIR provides details regarding land use.

Terrain and Geology

The Project primarily traverses the Interior Plain Physiographic Province, crossing into the Laurentian Upland Province—Superior Upland in the eastern portion of its route in Minnesota. The geologic terrain of both of these provinces is characterized by ancient pre-Cambrian igneous and metamorphic rocks that have been uplifted and eroded to a relatively low-relief plain, forming the stable geologic core of the North American continent, known as the craton. The North American craton, which is crossed by the Project, has been tectonically stable for over 500 million years. Therefore, there is a low probability of an earthquake of significant intensity or other seismic event in the Project area.

Maps of regional coverage of depth-to-bedrock generally are not of sufficient resolution to identify areas where bedrock occurs at specific depths; therefore, information on depth to bedrock in a specific location is difficult to determine without sampling. Generally, the depth to bedrock along the preferred route can exceed more than 450-feet. Less than 1 percent of the

route (from approximate milepost ("MP") 580.9 to MP 583.4) crosses an area of more or less continuous bedrock exposure (see section 5.1 of the EIR). Blasting is not currently anticipated but may be required if bedrock is encountered within the depth of the trench.

There are twenty gravel pits, three sand/gravel pits, and one sand pit within 1,500-feet of the construction workspace. There are twenty three tracts on state lands upon which metallic mineral leases are active and within 1,500-feet of the construction workspace. Ten of these tracts will be crossed by pipeline construction in Carlton County (see section 5.1.1 of the EIR).

Section 5.0 of the EIR provides details regarding geological resources.

Soils

The preferred route will cross the following Major Land Resource Areas: Red River Valley of the North; Northern Minnesota Gray Drift; Rolling Till Prairie; Northern Minnesota Glacial Lake Basins; Superior Lake Plain; Central Minnesota Sandy Outwash; and Wisconsin and Minnesota Thin Loess and Till, Northern part. Soils in these areas range from somewhat poorly drained soils with loamy and clayey textures to sandy soils that are well or excessively drained. Soils have a frigid temperature regime, an aquic or udic soil moisture regime, and mixed, smectic, or isotic mineralogy.

Approximately 61.2 percent of the soils within the Project area are considered prime farmland, 35.7 percent are hydric, 21.3 percent are compaction-prone, 14.7 percent are susceptible to water erosion, 70.0 percent are susceptible to wind erosion, 36.5 percent pose re-vegetative concern, and less than 1 percent of the route crosses shallow bedrock (see section 6.2.2 of the EIR).

Section 6.0 of the EIR provides details regarding soil resources.

Vegetation, Wildlife, and Fisheries

Sandpiper will be constructed through multiple biomes, including deciduous forest, conifer forest, and prairie. Wildlife habitats within these areas are diverse and include open areas, wetlands, and forested areas.

Within agricultural areas, wildlife habitat is limited and confined primarily to the undeveloped areas. Common mammalian species, including white-tailed deer, woodchucks, striped skunks, raccoons, weasels, Virginia opossum, and various mice and voles, use these areas for feeding and cover. Common bird species, such as European starlings, American crows, eastern meadowlarks, and house sparrows, are also typically found in agricultural areas.

Forested areas affected by the project are found primarily along the eastern portion of the preferred route. Mammalian species include eastern

chipmunks, black bears, snowshoe hares, gray squirrels, gray fox, porcupines, pine martens, and several species of bats.

Wetlands affected by the project consist primarily of emergent herbaceous wetlands, woody wetlands, and open water. The emergent wetlands and open water provide habitat for a variety of aquatic wildlife, including muskrats, beavers, mink, river otters, waterfowl, wading birds, and numerous species of reptiles and amphibians. The woody wetlands provide additional habitat for terrestrial wildlife, such as white-tailed deer, moose, gray wolves, black bears, and a variety of small mammals and songbirds.

Open land affected by the project consists primarily of shrub/scrub areas, grasslands, developed open space, and barren land. The undeveloped, vegetated open lands likely support several species of birds, numerous small rodents, and several species of snakes. Species such as coyote, red fox, and a variety of raptors typically hunt open areas for the varied prey. Other common wildlife species that may use open areas include thirteen-lined ground squirrels, eastern cottontail rabbits, and white-tailed jackrabbits.

The preferred route crosses 57 perennial and 87 intermittent streams in Minnesota (see table 9.2-1 of the EIR). A list of waterbodies crossed by the Project is included in Appendix E of the EIR. Most of these waterbodies contain warm water fisheries. The preferred route crosses five Minnesota Department of Natural Resources ("MNDNR")-designated trout streams and four unnamed trout stream tributaries (see section 7.3.1 of the EIR). Game fish that may occur in stream crossings in the project area include bass, bullhead, catfish, crappie, muskellunge, perch, pike, sunfish, walleye, and trout.

The preferred route crosses four Wildlife Management Areas ("WMAs") and two Aquatic Management Areas ("AMAs") (see section 11.1.2 of the EIR).

NDPC initiated consultation with the U.S. Fish and Wildlife Service ("USFWS") to understand the potential presence of threatened and endangered species in the vicinity of the Project and to ensure that NDPC considered recommendations regarding the federal Endangered Species Act, Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act during Project planning. NDPC discussed the USFWS initial recommendations with USFWS staff over the phone and received an email with information on federally listed species in Minnesota. The U.S. Army Corps of Engineers ("USACE") has since assumed the role of lead federal agency for the Project. USFWS Region 3 is now designated as the lead USFWS region for the Project, and Section 7 informal consultation under the Endangered Species Act has been initiated between the USACE and USFWS. Informal consultations with USACE and USFWS will continue in 2014.

NDPC also initiated consultation with the MNDNR Endangered Species Review Coordinator to understand the potential presence of threatened and endangered species in the vicinity of the Project. NDPC conducted a review of the Minnesota Natural Heritage Information in cooperation with the MNDNR to determine if any federally or state-listed species are known to occur within a 2-mile-wide study area centered on the preferred route. Results of the review are presented in Table 7.4.1-1 of the EIR. NDPC continues to consult with MNDNR regarding ongoing habitat assessments and field surveys as they relate to the potential presence of threatened and endangered species in the vicinity of the Project.

Section 7.0 of the EIR provides detailed information about vegetation, wildlife, fisheries, and threatened and endangered species.

Water Resources – Groundwater

Groundwater along the preferred route occurs in surficial aquifers and buried drift aquifers. Surficial aquifers occur above bedrock in unconsolidated sediments deposited by glaciers, streams, and lakes. Buried drift aquifers occur in well sorted sands and gravels deposited in bedrock valleys, alluvial channels, and outwash plains. Of the two types, surficial aquifers are most susceptible to impacts from construction because of the relatively shallow depth of the water table and coarse texture of the material overlying the aquifer.

NDPC identified 12 domestic water supply wells within 200-feet of the preferred route; one well was for a test hole and two were for irrigation wells. The remaining nine logs were for residential domestic supply wells.

No public water supply wells were identified in the vicinity of the Project (see section 8.2.1 of the EIR). Current Minnesota Department of Health ("MDH") regulations require a well isolation distance of 100-feet for petroleum pipelines (Minnesota Rules, Chapter 4725). The preferred route will not cross any aquifers that are designated by the US Environmental Protection Agency ("EPA") as sole-source aquifers.

The Project will cross about 0.3 mile of a Drinking Water Supply Management Area ("DWSMA") in the vicinity of Park Rapids (see section 8.2.2 of EIR). The MDH rates the sensitivity of the aquifer that supplies the well for that water supply as "high". NDPC has initiated consultation with the operators of the DWSMA and the MDH regarding this crossing.

The Project also crosses about 0.6 mile of the Wrenshall DWSMA and 390 feet of the Wrenshall 1 Wellhead Protection Area in Carlton County. NDPC has initiated consultation with the operator of the DWSMA/Wellhead Protection Area and the MDH regarding this crossing.

NDPC accessed a Minnesota Pollution Control Agency ("MPCA") database to identify sites with known or potential contamination within 0.5 mile of the preferred route. NDPC identified 30 sites; of these, 21 were determined to be more than 500-feet from the preferred pipeline route and are not anticipated to be impacted by or impact the Project (see section 8.3 of the EIR). Following final route selection and prior to construction, NDPC will re-assess the potential for encountering contaminated groundwater near sites that are within 500-feet of the final pipeline route. If necessary, appropriate avoidance or mitigation measures will be developed and implemented at that time in accordance with applicable state or federal regulations.

Section 8.0 of the EIR provides details regarding groundwater resources.

Water Resources – Surface Water

Surface waters crossed by the preferred route are located within the Red River of the North, Mississippi Headwaters, St. Croix River, and Western Lake Superior Basins. The Project will cross the Red Lake and Wild Rice Watershed Districts. The primary purpose of these watershed districts is to conserve the natural resources of the state through land use planning, flood control, and other conservation practices.

NDPC conducted waterbody field surveys along the preferred route in 2013 to identify waterbody (e.g., lakes, streams, rivers, and drainage ditches) locations and widths at the point of crossing. Hydrographic spatial data coverage was used to identify waterbodies crossed by the preferred route when survey data was not available. This review identified 144 waterbodies crossed by the preferred route including 57 perennial streams and 87 intermittent streams. Of these waterbodies, 60 are designated as Public Waters watercourses by MNDNR (see table 9.2-1 of the EIR). The Project will cross 11 impaired streams on the MPCA's 2012 Inventory List in 15 different places (see section 9.2.1 of the EIR). The Project also would cross one stream in two places currently listed as impaired on the MPCA's 2014 draft Inventory List. Calcareous fens are designated as Outstanding Resource Value Waters ("ORVWs") and are given special protection by state regulations. No previously identified fens will be affected by Sandpiper; however, 2013 field surveys identified a previously unknown calcareous fen associated with the Hill River drainage that would be crossed by the proposed pipeline route. NDPC has consulted with the MNDNR regarding this calcareous fen and will continue to work with MNDNR regarding calcareous fens in 2014.

For routing and planning purposes, NDPC used National Wetland Inventory ("NWI") data combined with field survey data through the 2013 field season to estimate the number, size, and locations of wetlands along the preferred route. Through a combination of NWI and field data, NDPC determined that the preferred route will cross a total of 874 wetlands. This number will be further

refined pending review of 2014 field data. A total of approximately 79.9 linear miles of wetlands will be crossed by the preferred route (see section 9.3.1 of the EIR). Of the wetlands crossed by the preferred route, five wetlands are listed on the MNDNR Public Waters Inventory. In addition, five basins listed on the MNDNR Public Waters Inventory are crossed by the preferred route (see section 9.3.2 of the EIR).

Section 9.0 of the EIR provides details regarding surface water resources.

Cultural Resources

NDPC reviewed the Minnesota State Historic Preservation Office's ("SHPO") site files to identify previously recorded cultural resources within the 250- to 450-foot-wide environmental survey area. This review identified four previously recorded sites. None of the previously recorded sites have been recommended as eligible for listing on the National Register of Historic Places ("NRHP").

NDPC conducted Phase 1 reconnaissance surveys along approximately 86 percent of the environmental survey area in Minnesota in 2013. NDPC utilized a statistically-based Geographic Information System ("GIS") predictive sensitivity model to identify cultural resources within the survey area. During the 2013 survey NDPC identified 35 archaeological sites and revisited 2 previously recorded sites. Of the 37 sites recorded, 29 date to Pre-contact period occupations and consist of various assemblages of stone tools and tool-making debris, faunal (animal) remains, pottery, and pit features. Seven sites date to historic period occupations from the 19th and 20th centuries, and one site was occupied during both Pre-contact and historic periods. One of the historic period sites is a previously unrecorded family cemetery plot. No historic structures have been recorded within the survey area (see section 10.2 of the EIR). The remaining 14 percent of the environmental survey area will be surveyed in 2014.

Section 10.0 in the EIR provides details regarding cultural resources.

Federal, State, and County Recreational Areas

The preferred route will not cross any national parks, national forests, national landmarks, wilderness areas, wildlife refuges, waterfowl production areas, or national wildlife management areas. However, the preferred route will cross a National Scenic Trail and four Minnesota rivers that are listed on the National Rivers Inventory. None of these are federally designated as National Wild and Scenic River (see section 11.1.1 of the EIR).

Sandpiper will not cross any state parks or state scientific and natural areas. However, the Project will cross state and county forests, county parks, state WMAs and AMAs, state-designated trails, designated scenic byways, and state-designated water trails/canoe routes (see section 11.1.2, 11.1.3, and 11.1.4 of the EIR).

Section 11.0 of the EIR provides details regarding federal, state and county recreational areas.

Air Quality

The Project will include the construction of external floating roof storage tanks at a new Sandpiper Clearbrook terminal facility. Once constructed, the new tanks will be subject to federal New Source Performance Standards under 40 C.F.R. 60 Subpart Kb. Tank emissions will be controlled by the floating roof, rim seals, and deck fitting controls (such as gaskets, sleeves, and wipers). NDPC plans to submit a stationary source applicability determination request to the MPCA regarding the stationary source status of the proposed new terminal. NDPC will submit an appropriate air permit application based on the result of stationary source determination. NDPC will complete the required New Source Performance Standards notifications and submittals for the new storage tanks. Project related emissions at the new Clearbrook Terminal will be predominantly Volatile Organic Compounds ("VOC") and are estimated to be 24 tons of VOC/year (see section 12.3 of the EIR).

Construction of the pipeline and associated aboveground facilities could result in intermittent and short-term fugitive emissions. These emissions would include dust from soil disruption and combustion emissions from the construction equipment.

Section 12.0 of the EIR provides additional details regarding air quality.